

# ARCOS – Producer Guide

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## 1. Purpose of this Guide

This guide explains the role of the Producer in ARCOS (AI Rule-Constrained Orchestration System). It is written for developers, clarifying that the Producer is a process with defined boundaries. Developers can implement it however they wish, provided that schema-based communication protocols are respected. The Producer must handle specific inputs and produce specific outputs, but internal design is entirely flexible.

## 2. Role in ARCOS

The Producer is responsible for generating concrete outputs (e.g., code, configurations, data files) from project specifications and domain rules.

## 3. Responsibilities

- Transform validated project and domain specifications into tangible artifacts.
- Return either an Output (encoded as base64 with checksum) or a request for clarification if inputs are insufficient.
- Work with domain-specific schemas to ensure outputs align with expectations.

## 4. Workflow

1. Receive `ProducerRequest` from the Orchestrator.
2. Check inputs (Project Spec, Domain Schema, Rules, original files of the `output.zip`, mentioned in the validator or post processor reports).
3. Generate outputs (e.g., code, packaged as `Output.zip`).
4. Return `ProducerResponse.xml` with Output or Clarification.

## 5. Inputs and Outputs

- Inputs: Project Spec, Domain Schema, Custom Rules, Predefined Rules, original files of the `output.zip`, mentioned in the validator or post processor reports.
- Outputs: `ProducerResponse.xml` (Output or Clarification), including checksums and optional packaging.

## 6. Example (BLEU Inventory Domain)

In the BLEU domain, the Producer receives BLEU inventory rules and schema, then generates a Rust CRUD interface. It returns this packaged as `Output.zip` with a checksum.

## 7. Benefits for Developers

- Freedom to use any language or toolchain to generate outputs.
- Flexible internal design, only the schema contracts matter.
- Domain-specific freedom: teams may decide their own internal report formats when implementing all agents together.

## 8. Conclusion

The Producer is a well-defined ARCOS component: it operates within schema-constrained boundaries, while giving developers freedom of implementation. By respecting the communication contracts, developers ensure that their Domain Producer agent integrates seamlessly into ARCOS flows.